



Krisendiskurse und Securitization von Wasser

Forschung über gesellschaftliche
Naturverhältnisse am Beispiel des Projekts
WaterPower



Prof. Dr. Antje Bruns

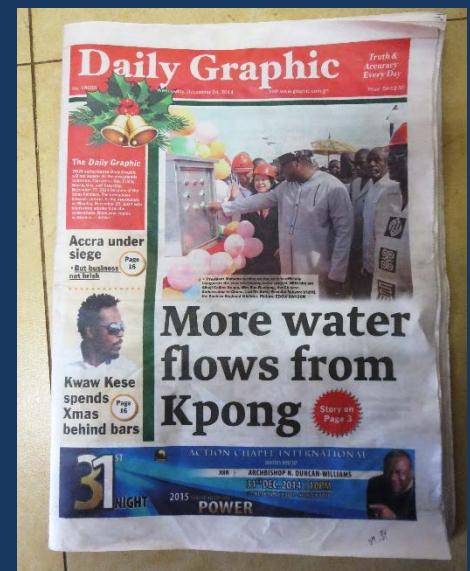
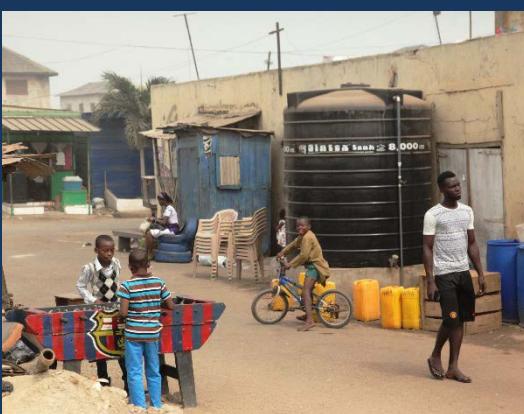
22. Januar 2015 Frankfurt



WATERPOWER.

Collision of mega-trends in a west-African coastal city

www.waterpower.hu-berlin.de



Quelle: Google Maps

Fotos: WaterPower Team



WATERPOWER.

Collision of mega-trends in a west-African coastal city

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- I. Die Wasserkrise in Accra
- II. Die globale Wasserkrise in der Forschung
- III. Water Security und Securitization von Wasser
- IV. Zur Rolle von Wissenschaft und Hochschule



Wasserressourcen

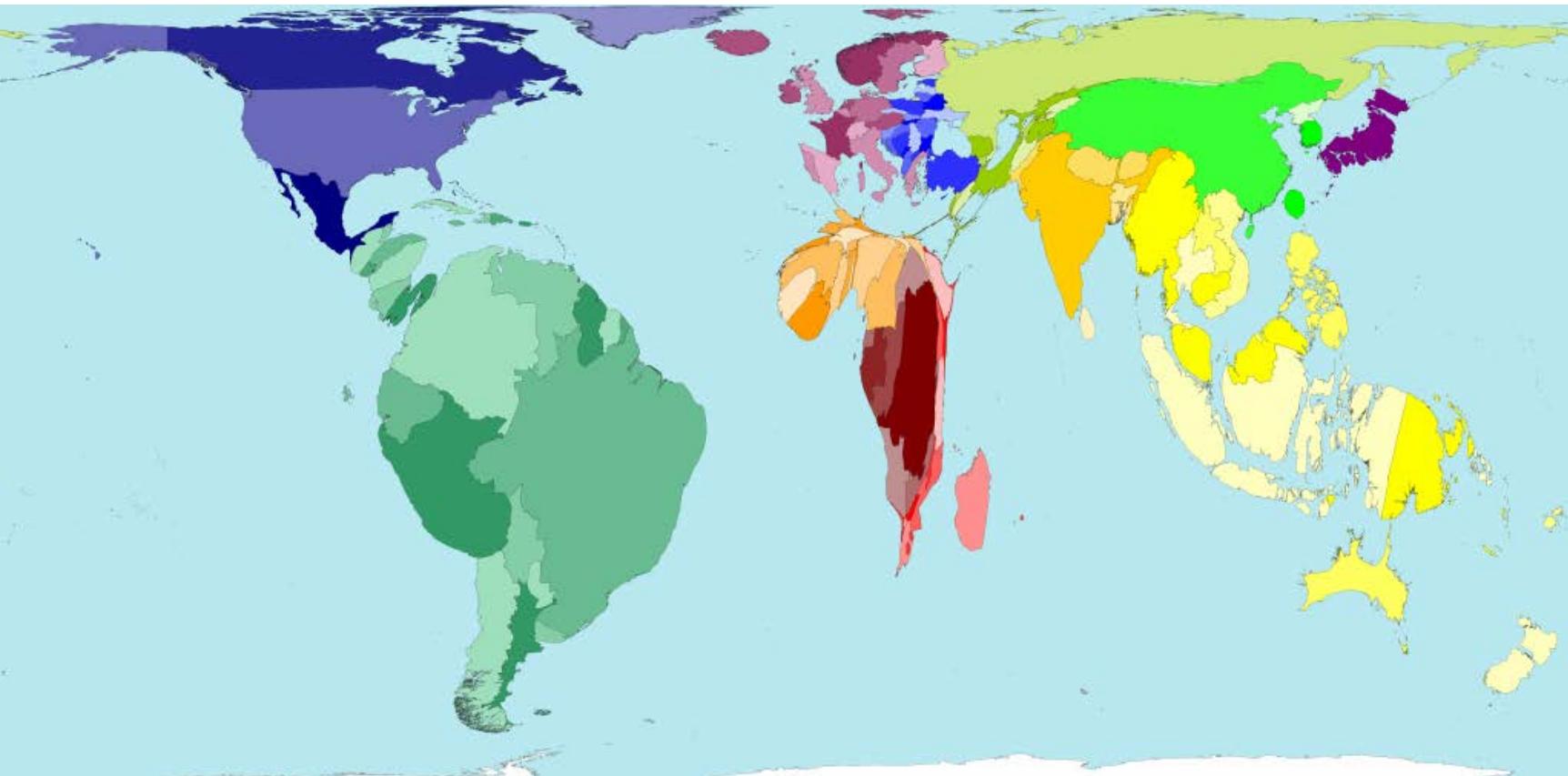


Abb.: proportionale Darstellung Wasserressourcen je Land
<http://www.worldmapper.org/images/largepng/102.png>



Wasserverbrauch

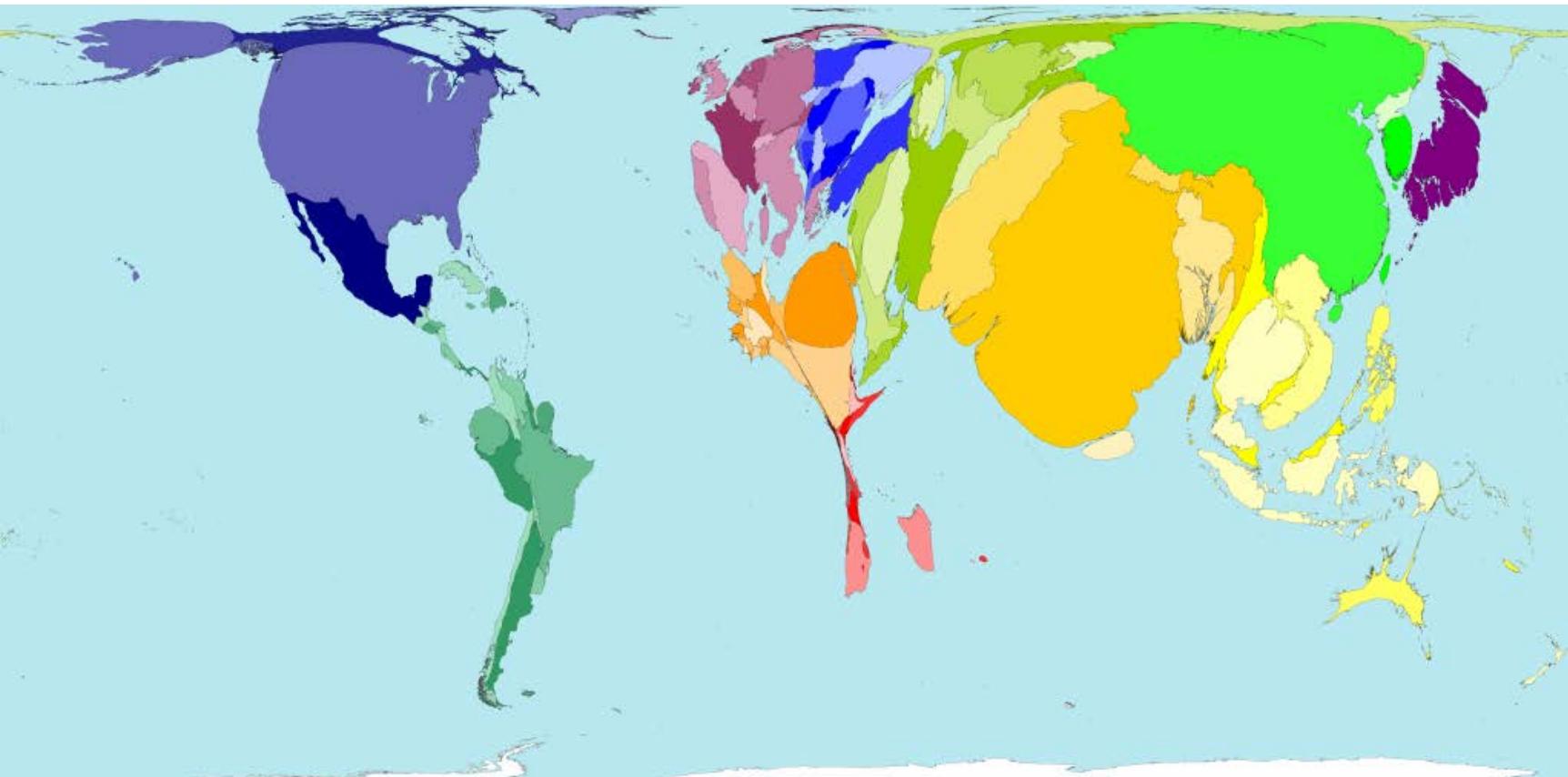


Abb.: Wasserverbrauch pro Kopf

<http://www.worldmapper.org/images/largepng/104.png>

Ghanas Wassersektor – Reformen und Wendepunkte



Year	Event
1957	Independence
1959	Severe water shortage in Accra
1960	Construction of the Akosombo Dam for power generation and water supply for industrial and household use
1965	Ghana Water and Sewerage Corporation (GWSC) established to produce and distribute urban and rural water supply
1969	First World Bank/GEF loan for urban water sector development in Accra/Tema
1973	Local district offices and regional offices of GWCL created (on paper); first sewerage system in Accra taken in operation
1983	Beginning of Ghana's first Structural Adjustment Programme
1987	Launch of the Water Sector Restructuring Project (WSRP)
1993	Decentralisation of responsibilities for sanitation and small towns water supply from GWSC to the District Assemblies
1994	Separation of urban and rural water supply. Community Water and Sanitation Department (CWSD) created within GWSC
1996	Foundation of the Water Resource Commission (WRC) to be in charge of overall regulation and management of water utilisation
1997	Establishment of the Public Utilities Regulatory Commission (economic regulation)
1999	GWSC converted into 100% state-owned limited liability (GWCL) with responsibility for urban water supply; bidding process for a lease contract initiated
2001	Establishment of a National coalition against the privatisation of water
2002	Agreement among World Bank and GoG to redesign form of PPP (i.e. short-term management contract instead of full privatisation)
2003	Establishment of Coalition of NGOs in water supply and sanitation (CONIWAS)
2004	Water Directorate established within MWRWH; Launch of the Urban Water Project to implement PPP
2005	Private operator (Aqua Vitens Rand, AVRL) selected for a five-year management contract for urban water supply
2008	National Water Policy launched by GoG. Accra Sewerage Improvement Project launched
2009	1st Ghana Water Forum, annual event to raise visibility of water security issues and place them on political agenda
2011	Ghana Urban Water Company Limited established to take over urban water management services for 12 months
2012	National IWRM Plan published by the WRC. National Strategy for Community Participation in Management of Urban WASH Services published



Die urbane Wasserkrise in Accra

**Genügend
Wasser-
ressourcen**



**Wasser-
krise**

Die Politische Ökologie der urbanen Wasserkrise in Accra

- Wasserkrise ist ein Produkt ökonomischer, politischer, sozialer – und zu einem geringeren Anteil hydrologischer – Faktoren
 - Bedeutung multipler Krisen und Kaskadeneffekte
 - Prozesse operieren auf unterschiedlichen Skalen
- Historische Dimension für das Verständnis heutiger Wasserverhältnisse zentral
- Zusammenspiel nationaler Institutionen und universellen Politiken (IWRM) vermittelt durch Gebergemeinschaft und Global Water Research Community



<http://www.oilempire.us/water.html>

„Controlling the flow of water means controlling the city“ (Swyngedouw 2004)



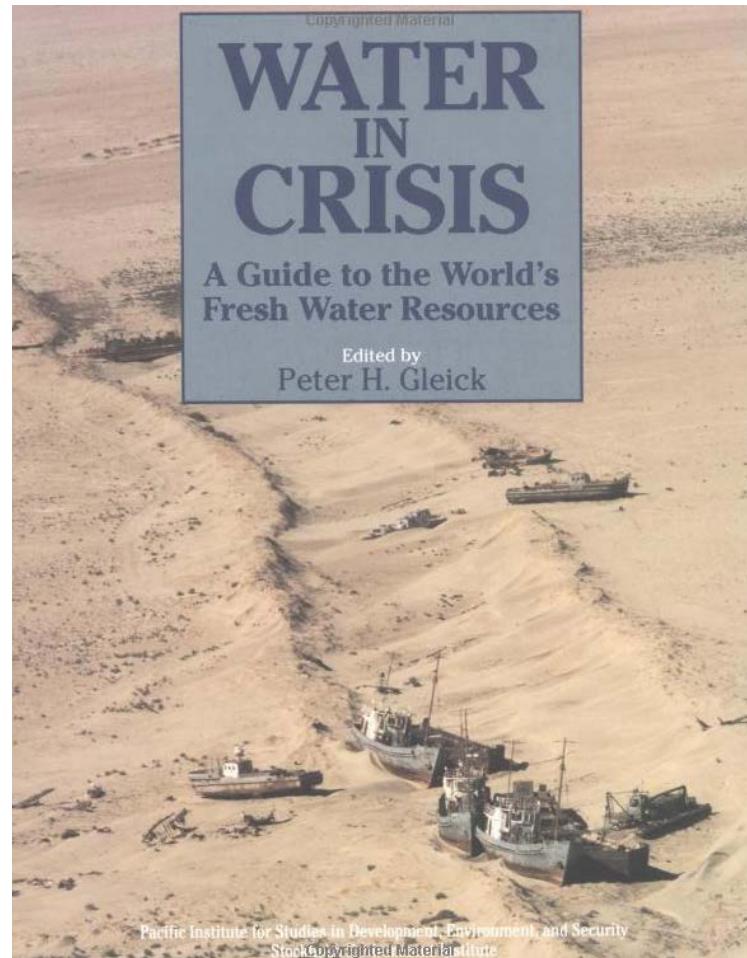
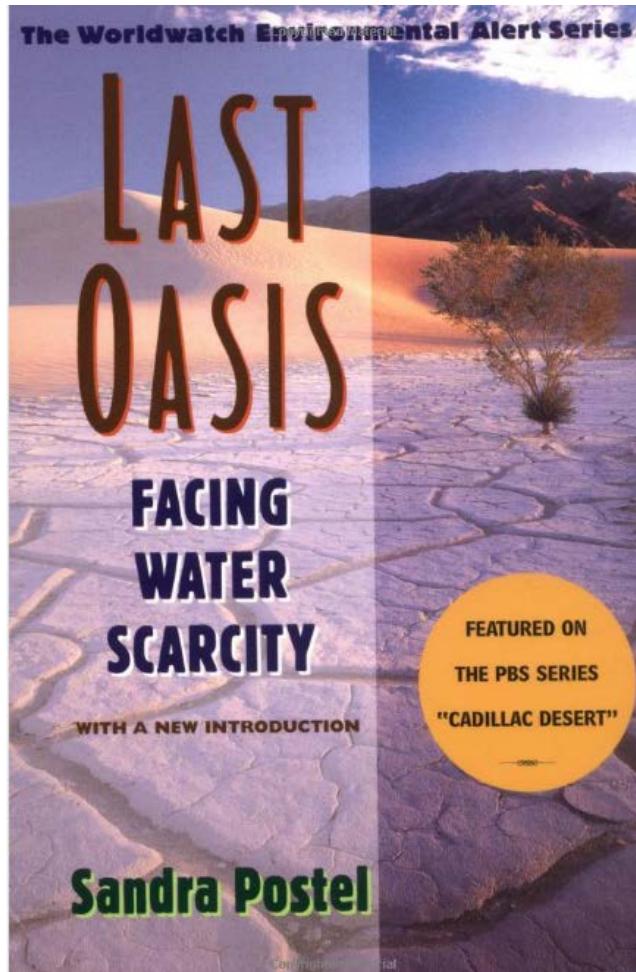
Forschung zur Wasserkrise



Wie und von wem wird der Begriff „Wasserkrise“ in wissenschaftlichen Artikeln verwendet?

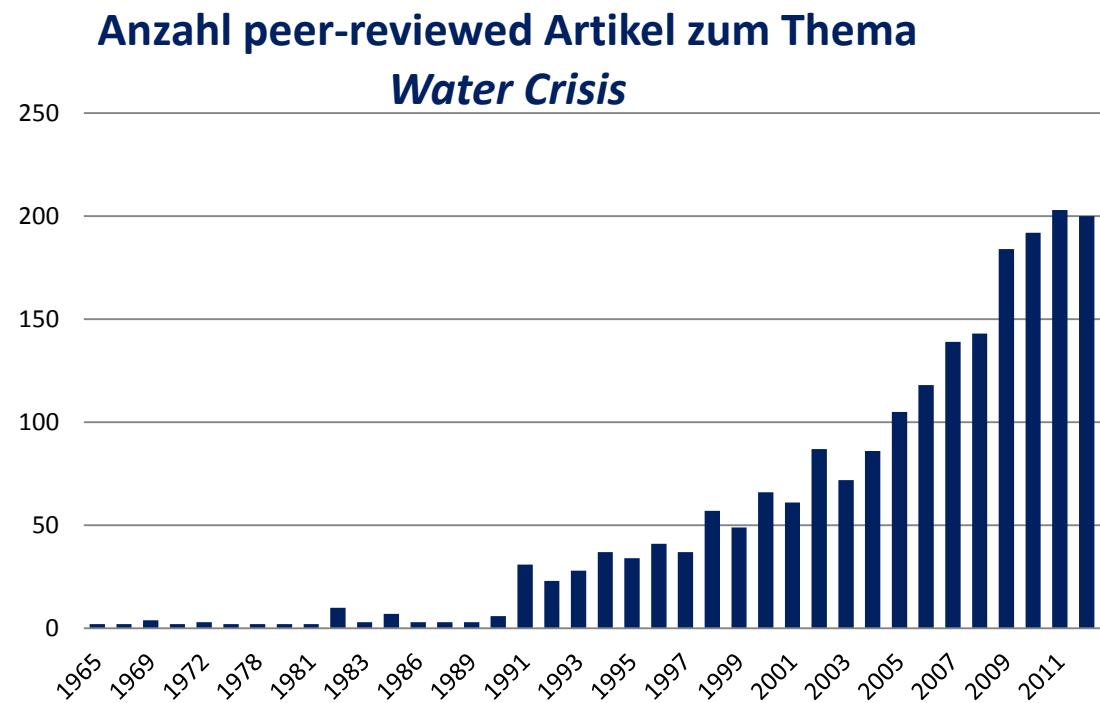
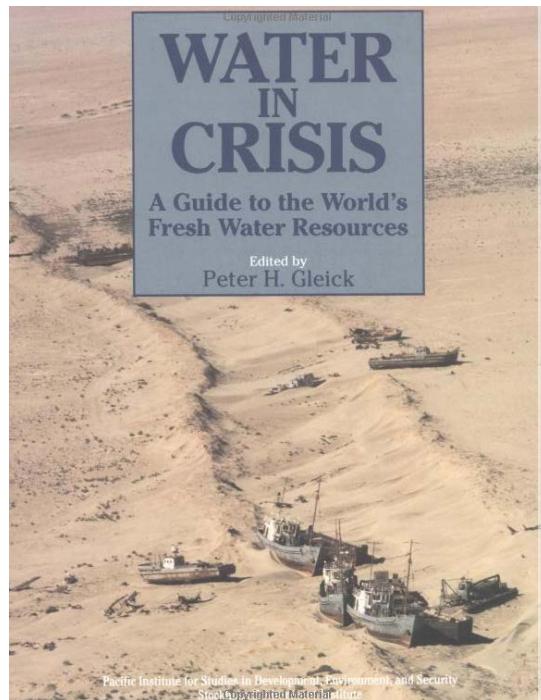


Anfänge: Beschreibung der Wasserkrise





Forschung zur Wasserkrise





Rahmung der Wasserkrise

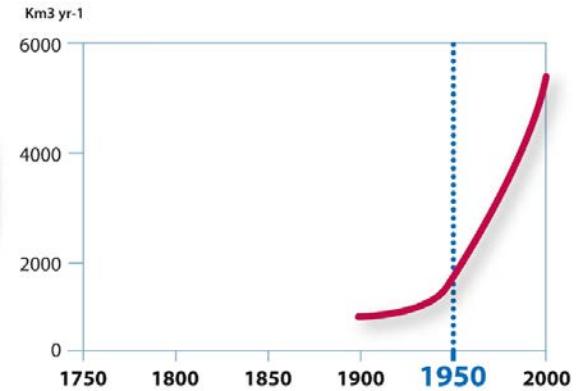


“Under an average economic growth and an actual efficiency improvement of 1% a year, the world wide water demand and supply gap will be approximately 40% by 2030”

Charting Our Water Future (2009), The 2030 Water Resource Group



Water use



Shiklomanov (1990) Global Water Resources

IGBP synthesis: Global Change and the Earth System, Steffen et al 2004

“There is much talk of a water crisis, of which the most obvious manifestation is that 1.2 billion people lack access to safe and affordable water for their domestic use”

(Rijbersman, 2006: 6)

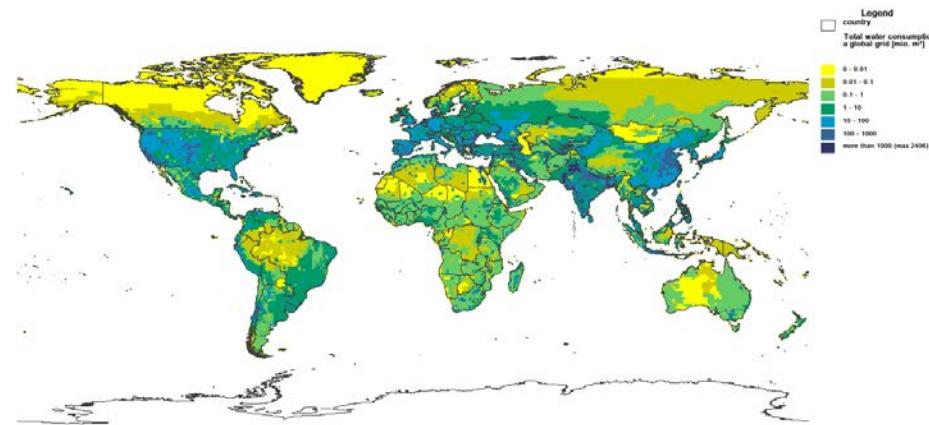
Rahmung der Wasserkrise



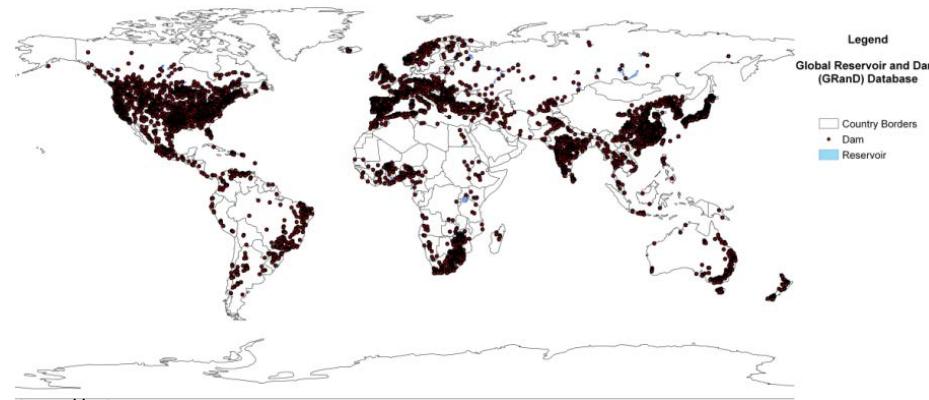
“Rapid land-use changes, destruction of wetlands and riparian areas, increased discharges of manure and human wastes, and increased fertilizer use all will contribute to increased inputs of nutrients to waters [...]”

“the combination of climate warming, increases in human populations and industry, and historic drought is likely to cause an unprecedented water crisis”

“Catchment-scale planning for management and conservation of freshwaters [...] is urgently needed to maximize efficient use of increasingly scarce freshwaters in a time of warming climate and rapidly increasing human activity.”



<http://atlas.gwsp.org>



<http://atlas.gwsp.org>

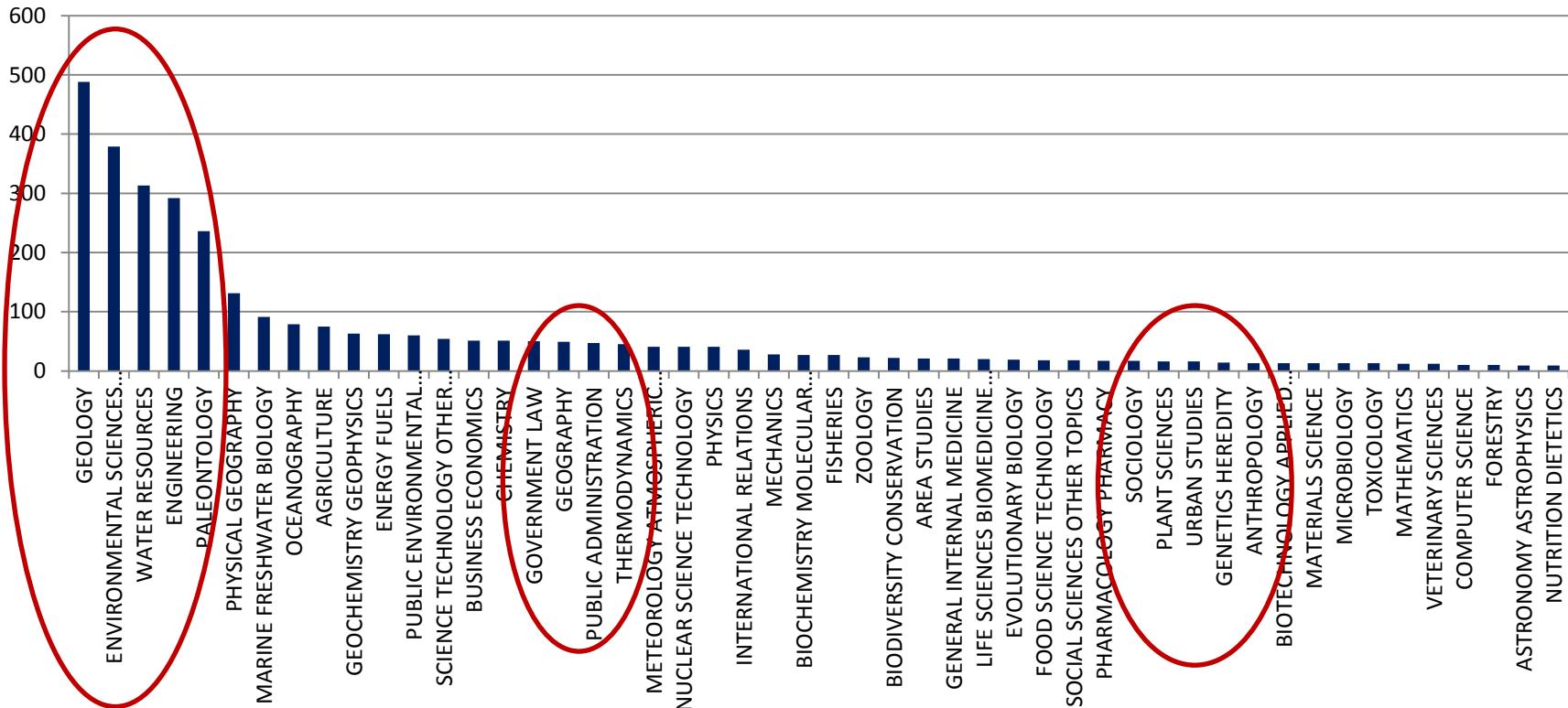
Schindler, D. W. and W. F. Donahue (2006): An impending water crisis in Canada's western prairie provinces. PNAS



Forschung zur Wasserkrise

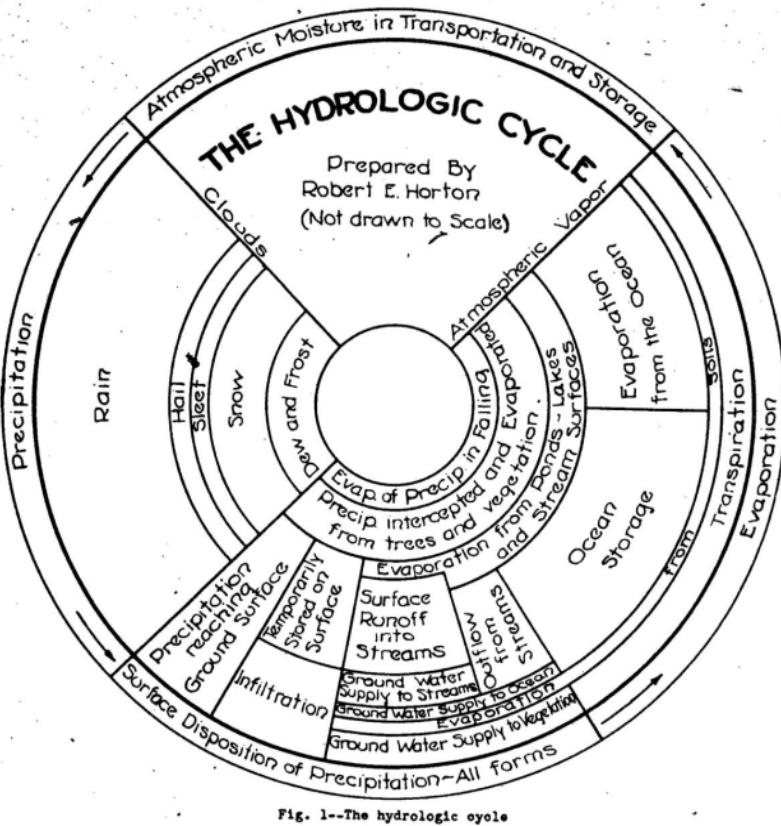


Forschungsgebiete Water Crisis





Hydrologie als Wissenschaft vom Wasser



Horton, Robert E. 1931. The Field, Scope, and Status of the Science of Hydrology. *Transactions American Geophysical Union* 12:189-202.

- Robert Elmer Horton (May 18, 1875 - April 22, 1945): amerikanischer Ökologe und Bodenkundler
- Gilt als Begründer der Hydrologie
- Beschrieb erstmals den Wasserkreislauf in strukturierter Weise (Infiltration, Evaporation, Zwischenabfluss, Oberflächenabfluss...)



Die Lösung: Integriertes Wasserressourcenmanagement (IWRM)



„IRWM is a process that promotes the coordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems“ (Global Water Partnership)

- basiert auf „Expertenwissen“
 - begünstigt große investive Maßnahmen
 - Fragen der Gerechtigkeit, des Zugangs zu Wasser und dessen Kontrolle wurden unzureichend im Rahmen des IWRM adressiert



Figure: Global Water Crisis content cloud. Web of Science database using TagCloud.com



Folgerungen

„Upping the social in Hydrology“



- Deutliche Trennung epistemischer Gemeinschaften innerhalb der Wasserforschung

"traditional approaches in water-resources studies tend to separate various aspects of the hydrological cycle into discrete and independent objects of study." (Swyngedouw, 1999:443)

- Unzureichende Konzeptualisierung der Wasserkrise

"Despite decades of research, the nature of the global freshwater crisis remains poorly defined and characterized [...]"
(Srinivasan et al., 2012: 13)

- Stärkung der sozialen Perspektive notwendig

Considering the water crisis as a hybrid – which includes water (non-human) as well as a „complex array of values, intentions and exptectations“ (Trottier, 2008: 198)

"A drought may be a natural phenomenon, but a water crisis is necessarily a hybrid object. [...] Water is short only when social actors have decided it so" (Trottier 2008: 197)

- Leerstellen innerhalb der Global Change Forschung

... "there is a need to integrate insights from the social sciences and humanities into a new science of global change – a science that recognizes subjectivity and emphasizes the notion of change"
(O'Brien, 2011: 542)

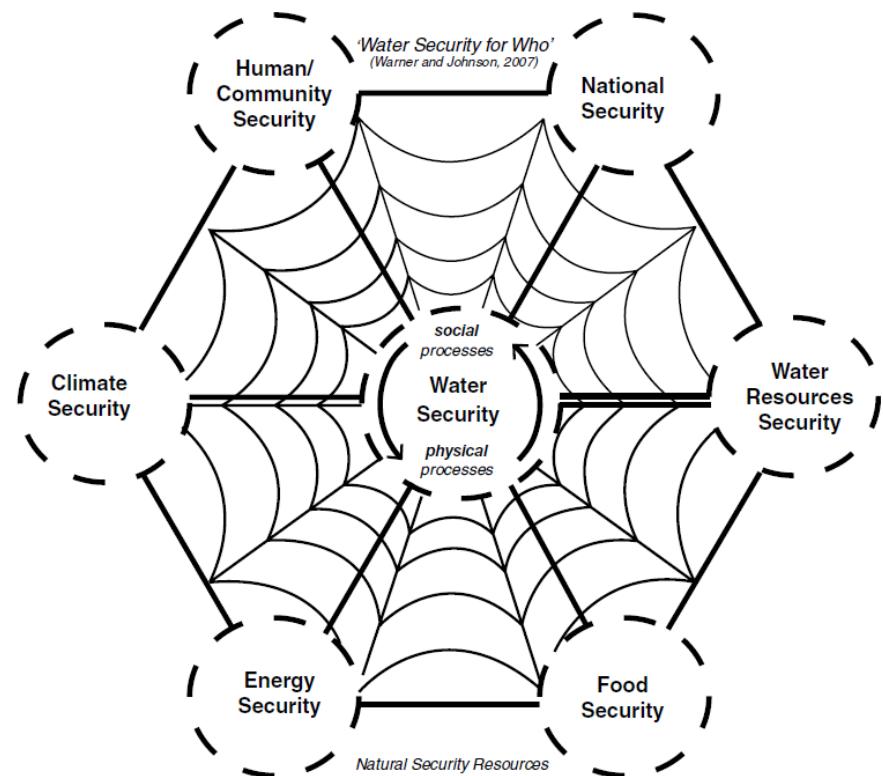


Vom Integrierten Wasserressourcenmanagement zu neuen Debatten: Water Security



- Water Security – ein aufkommendes Konzept
 - bietet normative Orientierung welches Ziel erreicht werden soll (vgl. Den Haag Deklaration, 2000)
 - enthält (implizit) Hinweise auf thresholds (water insecurity)
- Web of water security

“tool emphasises the inseparability of social and biophysical processes related to water, and an understanding of how these mediate and are mediated by the socioeconomic and political context within which they occur” (Zeitoun, 2013: 20)



Zeitoun, The web of water security. 2013



Securitization von Wasser in Accra?



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Global Economics

A Water Crisis Threatens Ghana's Economic Growth

By Moses Mozart Dzauw | April 11, 2013

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Photograph by Nyani Quarmyne/Panos

Charity Atter's maid, Eva Tetteh, lowers a bucket deep into a well and waits about two minutes for the water to collect inside. Atter, a 37-year-old widow who lives in

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„the lack of water might become a national security concern. Because, unreliable water access agitate people“

(Senyo Amengor, Managing Director GWCL, 14.01.2015)

“the wars of the next century will be fought over water”

(Ismail Serageldin, Weltbank)



Securitization eine extreme Form der Politisierung

“Politicisation makes an issue relevant and involves responsibility, securitisation, on the contrary, involves the urgency of a threat, which legitimises actions outside the normal bounds of political procedure” (Sinha 2005, S. 320–321)

- Kooperation (nicht Securitization) ist integraler Bestandteil von Water Security



Nachwuchsgruppe WaterPower



Von links nach rechts

Fanny Frick
Emily Raab
Felipe Coelho Costa
Lara Bartels
Rossella Alba
Richard Appiah Otoo
Friederike Grimme
Antje Bruns
Viviana Wieglob

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WaterPower: Ziele und Mission



WaterPower

Study of urban water dynamics in the context of global change

Research: Knowledge Generation

In-depth research in
the field of
Sustainability Science

Education and Qualification: Knowledge Sharing

Capacity building for
a next generation of
scholars

Extent and enrich science through co-production of knowledge

Transdisciplinary
approach: problem-
oriented and of
societal relevance



Neuer Modus von Wissenschaft



Einbeziehung von Wissen, das außerhalb liegt

Co-DESIGN

- Need for shared analytical frameworks that reflect current challenges (societal relevance)
- Problem-Framing with Stakeholders

Co-PRODUCTION

- Regular Stakeholder Workshops
- Participatory Research on practises of water allocation and water management regimes

Co-INTERPRETATION

- Scenario Workshops and Science-Policy Dialogues
- Transition to adaptive resource management in the context of global environmental change

cross-sectoral
and cross-scalar system knowledge

transformative
and target knowledge



Notwendige Strukturveränderungen: das Beispiel Humboldt-Universität zu Berlin



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Panel Discussion on HU's Sustainability

Following an invitation from the student driven Sustainability Office, Jan-Hendrik Olbertz, Antje Bruns and others will discuss how to shape the Humboldt-Universität more sustainable. The panel discussion will take place on Tuesday, 27 January in the main building.

1 2 3 4

The Institute

Joining minds for sustainable pathways

At IRI THESys, the Integrative Research Institute on Transformations of Human-Environment Systems, scientists from humanities, social and natural sciences collaborate to solve interdisciplinary research questions related to the societal challenges of transforming human-environment systems.

Discussion Paper

Paper on telecoupling framework

The concept of telecoupling has recently been proposed in Land System Science as an analytical framework to address the increasing importance of distal connections and flows in driving current land use change. In this IRI THESys Discussion Paper the emergence and development of the telecoupling concept is traced.

Education

Education concept

Promoting young researchers is a priority task of IRI THESys, and its education concept is designed to support all the way through research careers, from secondary school students, bachelor and master students, doctoral and postdoctoral researchers to research group leaders.

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Calendar

Thursday, 22 January
15:00 WINS Seminar
Friday, 23 January
13:00 THESys Colloqu
Tuesday, 27 January
18:00 Panel Discussio
Thursday, 5 February
15:00 WINS Seminar
17:15 THESys Lecture
Friday, 6 February
13:00 THESys Colloqu

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IRI for the Sciences

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Excellence Initiative



Kritische Wissenschaft



Rahmung der Wasserkrise in Ghana

Dokumentenanalyse. Illustration: TagCloud.com



Rahmung der Wasserkrise in wissenschaftlichen Artikeln

Web of Science Abfrage. Illustration: TagCrowd.com